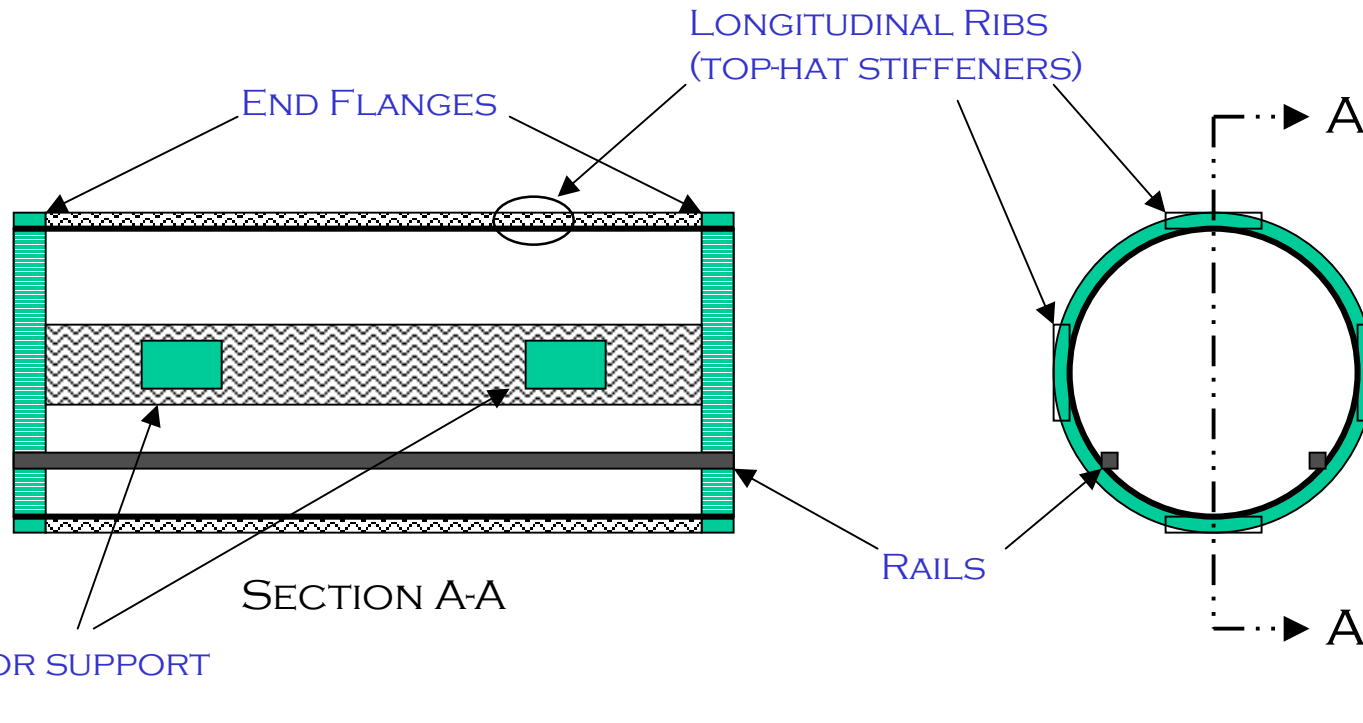


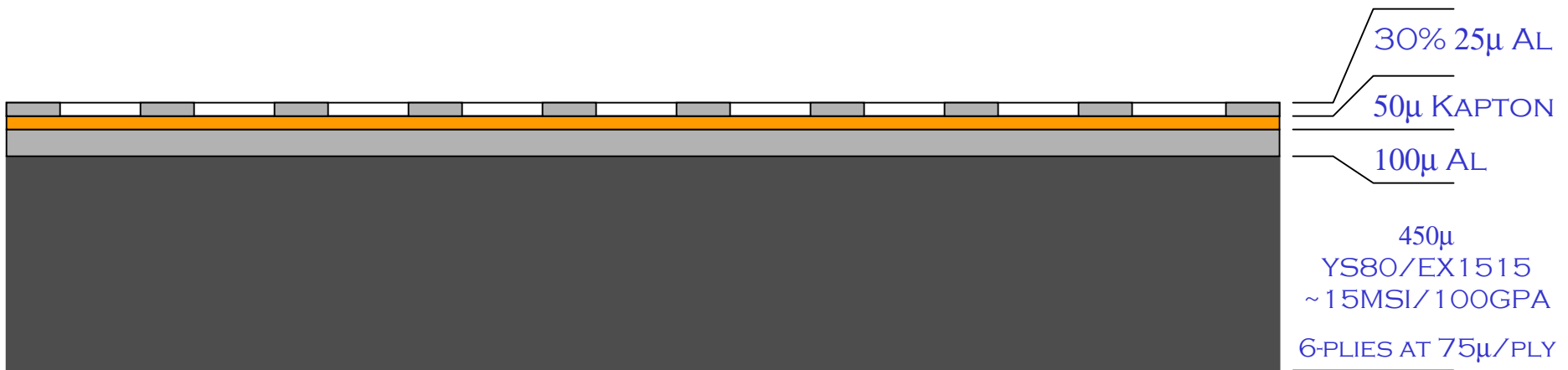
PIXEL DETECTOR REINFORCED SECTIONS



SUPPORTS MAY BE INTEGRATED INTO STIFFENERS ON SIDES
TO REDUCE OVERALL MASS—THIS MAY OBTIATE THE USE OF
TOPHATS ON THE SIDES...

PIXEL DETECTOR

NOMINAL SHELL LAMINATE

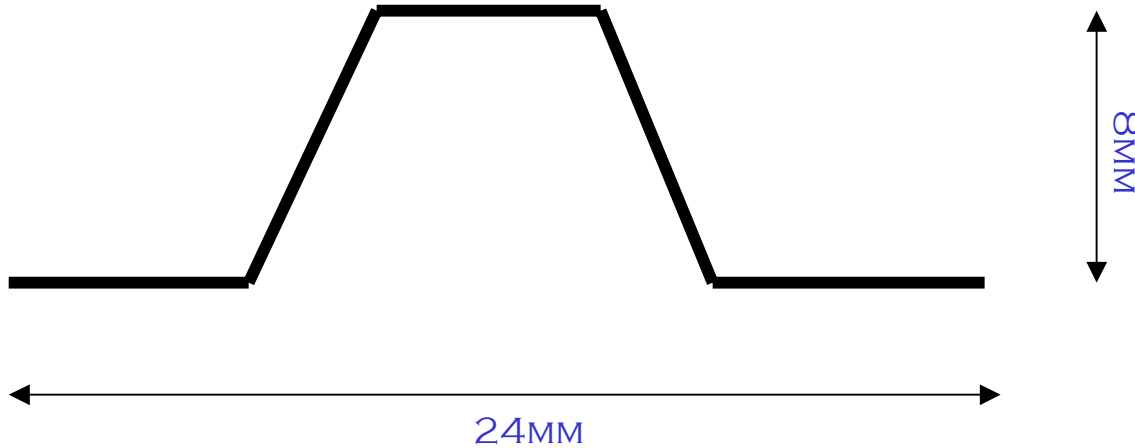


$$\%X_0 = 0.045/24 + 0.01/8.3 + 0.005/24 + 0.3(0.025/24) = 0.36\%X_0$$

PIXEL DETECTOR

TOP HAT LAMINATE

MATERIAL EQUIVELANT—40MM BY 0.450MM CFRP



#STIFFENERS/SECTION IS 6, REINFORCED TOP, BOTTOM AND SIDES

24-STIFFENERS X 40MM/STIFFENER = 960MM

TOTAL CIRCUMFERENCE OF SHELL IS $2\pi \cdot 230 = 1445\text{MM}$

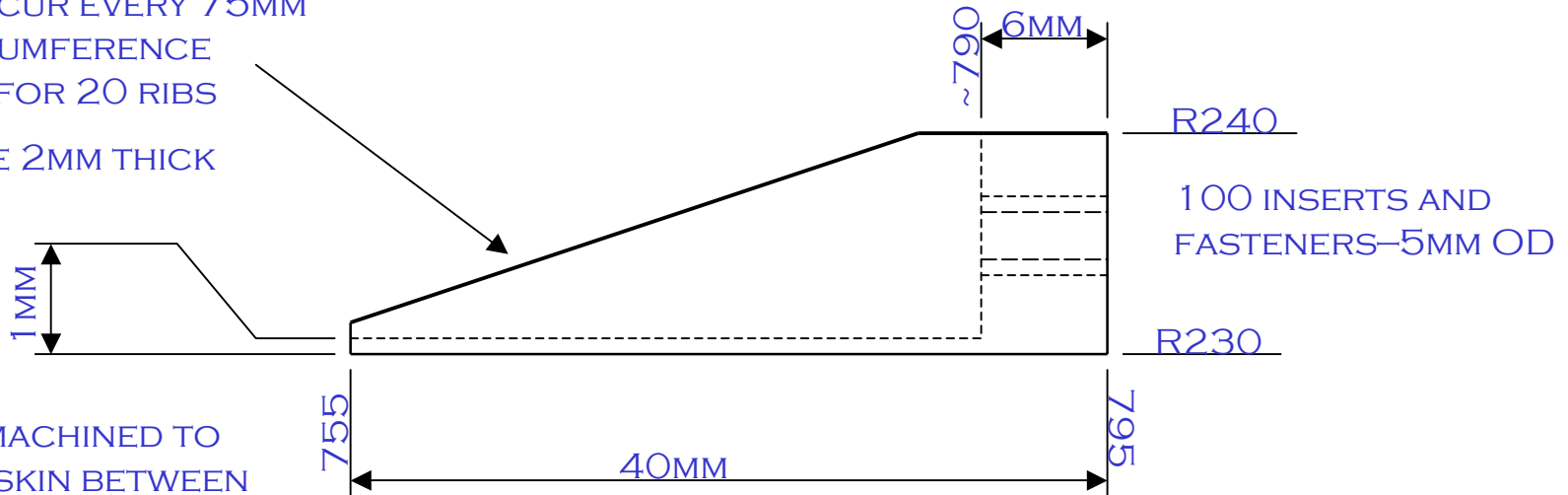
SIX STIFFENERS PER QUARTER ADDS 60% ON AVERAGE—MAY NEED TO REDUCE

LOOK INTO INTEGRATING THE SUPPORT WITH LATERAL STIFFENING RIBS

PIXEL DETECTOR END FLANGES

RIBS OCCUR EVERY 75MM
ON CIRCUMFERENCE
MAKING FOR 20 RIBS

RIBS ARE 2MM THICK

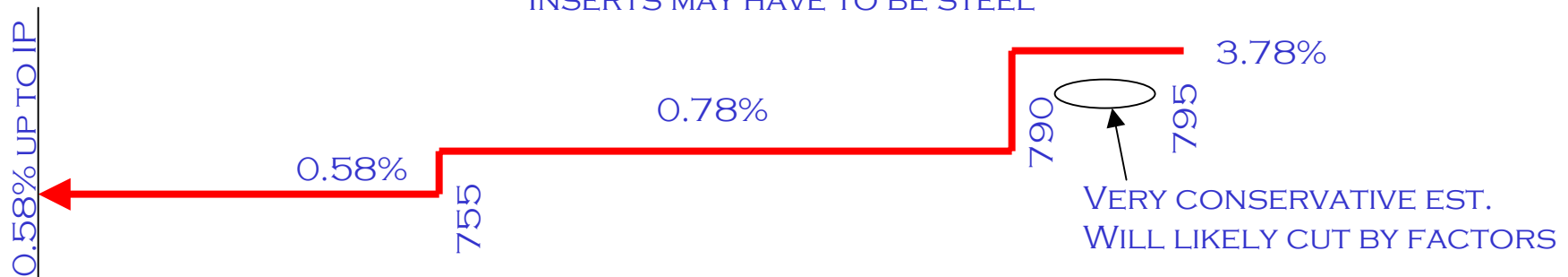


FLANGE IS MACHINED TO
1 MM THICK SKIN BETWEEN
RIBS—RIBS ARE TAPERED TO
HELP MATCH STIFFNESS

WITH INSERTS AND FASTENERS INSTALLED, END OF
FLANGE (6X10 ANNULUS) IS $\sim 10\%$ METAL

SHOULD INVESTIGATE TITANIUM—ALUMINUM IS NOT
STIFF ENOUGH, AND STEEL IS TOO HEAVY

INSERTS MAY HAVE TO BE STEEL



Insertable Services Material Estimate

